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SAXTON'S RURAL HAND-BOOKS.

A MEMOIR
ON
INDIAN CORN.



BY
D. J. BROWNE.

New York:
O. M. SAXTON & CO.,
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140 FULTON STREET.

Ω

PRICE TWENTY-FIVE CENTS.

THE
HASTY-PUDDING;
A Poem,
IN THREE CANTOS.

WRITTEN AT CHAMRERY, IN SAVOY, JANUARY, 1793,

BY JOEL BARLOW,

MINISTER PLENIPOTENTIARY TO FRANCE.

Omne tulit punctum qui miscuit utile dulci.

He makes a good breakfast who mixes pudding with molasses.



WITH

A MEMOIR

ON

MAIZE OR INDIAN CORN.

COMPILED BY

D. J. BROWNE,

UNDER THE DIRECTION OF THE AMERICAN INSTITUTE.

NEW YORK:

C. M. SAXTON & COMPANY,

AGRICULTURAL BOOK PUBLISHERS, 140 FULTON ST.

1856.

THE

HASTY-PUDDING.

CANTO I.

YE Alps audacious, thro' the heavens that rise,
To cramp the day and hide me from the skies ;
Ye Gallic flags that o'er their heights unfurl'd,
Bear death to kings, and freedom to the world,
I sing not you. A softer theme I choose,
A virgin theme, unconscious of the Muse,
But fruitful, rich, well suited to inspire
The purest frenzy of poetic fire.

Despise it not, ye Bards to terror steel'd,
Who hurl'd your thunders round the epic field ;
Nor ye who strain your midnight throats to sing
Joys that the vineyard and the still-house bring ;
Or on some distant fair your notes employ,
And speak of raptures that you ne'er enjoy.
I sing the sweets I know, the charms I feel,
My morning incense, and my evening meal,
The sweets of Hasty-Pudding. Come, dear bowl,
Glide o'er my palate, and inspire my soul.
The milk beside thee, smoking from the kine,
Its substance mingl'd, married it with thine,
Shall cool and temper thy superior heat,
And save the pains of blowing while I eat.

Oh ! could the smooth, the emblematic song
Flow like the genial juices o'er my tongue,
Could those mild morsels in numbers chime,
And as they roll in substance, roll in rhyme,
No more thy awkward unpoetic name,
Should shun the Muse, or prejudice thy fame ;

But, rising grateful to th' accustom'd ear,
All bards should catch it, and all realms revere !

Assist me first with pious toil to trace,
Thro' wrecks of time thy lineage and thy race ;
Declare what lovely squaw, in days of yore,
(Ere great Columbus sought thy native shore,)
First gave thee to the world ; her works of fame
Have liv'd indeed, but liv'd without a name.
Some tawny Ceres, goddess of her days,
First learn'd with stones to crack the well-dry'd maize,
Thro' the rough sieve to shake the golden show'r,
In boiling water stir the yellow flour—
The yellow flour, bestrew'd and stir'd with haste,
Swells in the flood and thickens to a paste,
Then puffs and wallops, rises to the brim,
Drinks the dry knobs that on the surface swim ;
The knobs at last the busy ladle breaks,
And the whole mass its true consistence takes .

Could but her sacred name, unknown so long,
Rise like her labours, to the son of song,
To her, to them, I'd consecrate my lays,
And blow her pudding with the breath of praise
if 'twas Oello, whom I sang before,
I here ascribe her one great virtue more.
Nor thro' the rich Peruvian realms alone
The fame of Sol's sweet daughter should be known,
But o'er the world's wide climes should live secure,
Far as his rays extend, as long as they endure.

Dear Hasty-Pudding, what unpromis'd joy
Expands my heart, to meet thee in Savoy !
Doom'd o'er the world thro' devious paths to roam,
Each clime my country, and each house my home,
My soul is sooth'd, my cares have found an end,
I greet my long-lost, unforgotten friend.

For thee thro' Paris, that corrupted town,
How long in vain I wander'd up and down,
Where shameless Bacchus, with his drenching hoar
Cold from his cave, usurps the morning board
London is lost in smoke and steep'd in tea ;
No Yankee there can lisp the name of thee ;

The uncouth word, a libel on the town,
 Would call a proclamation from the crown.*
 From climes oblique, that fear the sun's full rays,
 Chill'd in their fogs, exclude the gen'rous maize;
 A grain whose rich luxuriant growth requires
 Short gentle showers, and bright ethereal fires.

But here, tho' distant from our native shore,
 With mutual glee we meet and laugh once more
 The same! I know thee by that yellow face,
 That strong complexion of true Indian race,
 Which time can never change, nor soil impair,
 Nor Alpine snows, nor Turkey's morbid air;
 For endless years, thro' every mild domain,
 Where grows the maize, there thou art sure to reign

But man, more fickle, the bold license claims,
 In different realms to give thee different names.
 Thee the soft nations round the warm Levant
Polenta call, the French, of course, *Polente*;
 Ev'n in thy native regions, how I blush
 To hear the Pensylvanians call thee *Mush*!
 On Hudson's banks, while men of Belgic spawn
 Insult and eat thee by the name *Suppawn*.
 All spurious appellations, void of truth;
 I've better known thee from my earliest youth,
 Thy name is *Hasty-Pudding*! thus our sires
 Were wont to greet thee fuming from their fires;
 And while they argu'd in thy just defence
 With logic clear, they thus explain'd the sense:—
 "In *haste* the boiling caldron o'er the blaze,
 "Receives and cooks the ready-powder'd maize;
 "In *haste* 'tis serv'd and then in equal *haste*,
 "With cooling milk, we make the sweet repast.
 "No carving to be done, no knife to grate
 "The tender ear, and wound the stony plate;
 "But the smooth spoon, just fitted to the lip,
 "And taugth with art the yielding mass to dip,
 "By frequent journeys to the bowl well stor'd
 "Performs the hasty honours of the board."
 Such is thy name, significant and clear,
 A name, a sound to every Yankee dear,

* A certain king, at the time when this was written, was publishing proclamations to prevent American principles from being propagated in his country.

But most to me, whose heart and palate chaste
 Preserve my pure hereditary taste.

There are who strive to stamp with disrepute
 The luscious food, because it feeds the brute ;
 In tropes of high-strain'd wit, while gaudy prigs
 Compare thy nursling man to pamper'd pigs ;
 With sovereign scorn I treat the vulgar jest,
 Nor fear to share thy bounties with the beast.
 What tho' the gen'rous cow gives me to quaff
 The milk nutritious ; am I then a calf ?
 Or can the genius of the noisy swine,
 Tho' nursed on pudding, thence lay claim to mine ?
 Sure the sweet song, I fashion to thy praise,
 Runs more melodious than the notes they raise.

My song resounding in its grateful glee,
 No merit claims ; I praise myself in thee.
 My father lov'd thee thro' his length of days !
 For thee his fields were shaded o'er with maize ;
 From thee what health, what vigour he possess'd,
 Ten sturdy freemen sprung from him attest ;
 Thy constellation rul'd my natal morn,
 And all my bones were made of Indian corn.
 Delicious grain ! whatever form it take,
 To roast or boil, to smother or to bake,
 In every dish 'tis welcome still to me,
 But most, my Hasty-Pudding, most in thee.

Let the green succotash with thee contend,
 Let beans and corn their sweetest juices blend,
 Let butter drench them in its yellow tide,
 And a long slice of bacon grace their side ;
 Not all the plate, how fam'd soe'er it be,
 Can please my palate like a bowl of thee.

Some talk of Hoe-cake, fair Virginia's pride,
 Rich Johnny-cake this mouth has often try'd ;
 Both please me well, their virtues much the same ;
 Alike their fabric as allied their fame.
 Except in dear New England, where the last
 Receives a dash of pumpkin in the paste,
 To give it sweetness and improve the taste.
 But place them all before me, smoking hot,
 The big round dumpling rolling from the pot ;

The pudding of the bag, whose quiv'ring breast,
 With suet lin'd, leads on the Yankee feast ;
 The Charlotte brown, within whose crusty sides
 A belly soft the pulpy apple hides ;
 The yellow bread, whose face like amber glows,
 And all of Indian that the bake-pan knows—
 You tempt me not—my fav'rite greets my eyes,
 To that lov'd bowl my spoon by instinct flies.

CANTO II.

To mix the food by vicious rules of art,
 To kill the stomach and to sink the heart,
 To make mankind, to social virtue sour,
 Cram o'er each dish, and be what they devour,
 From this kitchen Muse first fram'd her book,
 Commanding sweets to stream from every cook ;
 Children no more their antic gambols tried,
 And friends to physic wonder'd why they died.
 Not so the Yankee—his abundant feast,
 With simples furnish'd, and with plainness dress'd,
 A num'rous offspring gathers round the board,
 And cheers alike the servant and the lord ;
 Whose well-bought hunger prompts the joyous taste
 And health attends them from the short repast.

While the full pail rewards the milk-maid's toil,
 The mother sees the morning caldron boil ;
 To stir the pudding next demands their care,
 To spread the table and the bowls prepare ;
 To feed the children, as their portions cool,
 And comb their heads, and send them off to school.

Yet may the simplest dish, some rules impart,
 For nature scorns not all the aids of art.
 E'en Hasty-Pudding, purest of all food,
 May still be bad, indifferent, or good,
 As sage experience the short process guides,
 Or want of skill, or want of care presides,
 Who'er would form it on the surest plan,
 To rear the child and long sustain the man ;

To shield the morals while it mends the size,
 And all the powers of every food supplies—
 Attend the lessons that the Muse shall bring,
 Suspend your spoons, and listen while I sing.

But since, O man! thy life and health demand
 Not food alone, but labour from thy hand,
 First in the field, beneath the sun's strong rays,
 Ask of thy mother, earth the needful maize;
 She loves the race that courts her yielding soil,
 And gives her bounties to the sons of toil

When now the ox obedient to thy call,
 Repays the loan that fill'd the winter stall,
 Pursue his traces o'er the furrow'd plain,
 And plant in measur'd hills the golden grain.
 But when the tender germ begins to shoot,
 And the green spire declares the sprouting root,
 Then guard your nursling from each greedy foe,
 Th' insidious worm, the all-devouring crow.
 A little ashes, sprinkled round the spire,
 Soon steep'd in rain, will bid the worm retire;
 The feather'd robber with his hungry maw
 Swift flies the field before your man of straw,
 A frightful image, such as school-boys bring
 When met to burn the Pope, or hang the King.

Thrice in the season, thro' each verdant row
 Wield the strong plough-share and the faithful hoe—
 The faithful hoe, a double task that takes,
 To till the summer corn, and roast the winter cakes.

Slow springs the blade, while check'd by chilling rains,
 Ere yet the sun the seat of Cancer gains;
 But when his fiercest fires emblaze the land,
 Then start the juices, then the roots expand;
 Then, like a column of Corinthian mould,
 The stalk struts upward, and the leaves unfold;
 The bushy branches all the ridges fill,
 Entwine their arms, and kiss from hill to hill:
 Here cease to vex them, all your cares are done;
 Leave the last labours to the parent sun;
 Beneath his genial smiles the well-dress'd field,
 When autumn calls, a plenteous crop shall yield

Now the strong foliage bears the standards high,
 And shoots the tall top-gallants to the sky ;
 The suckling ears their silky fringes bend,
 And pregnant grown, their swelling coats distend,
 The loaded stalk, while still the burthen grows,
 O'erhangs the space that runs between the rows ;
 High as a hop-field waves the silent grove,
 A safe retreat for little thefts of love,
 When the pledg'd roasting-ears invite the maid,
 To meet her swain beneath the new-form'd shade,
 His gen'rous hand unloads the cumbrous hill,
 And the green spoils her ready basket fill ;
 Small compensation for the two-fold bliss,
 The promis'd wedding and the present kiss.

Slight depredations these ; but now the moon
 Calls from his hollow tree the sly racoon ;
 And while by night he bears his prize away,
 The bolder squirrel labours thro' the day.
 Both thieves alike, but provident of time,
 A virtue, rare, that almost hides their crime.
 Then let them steal the little stores they can,
 And fill their gran'ries from the toils of man ;
 We've one advantage where they take no part,—
 With all their wiles they ne'er have found the art
 To boil the Hasty-Pudding ; here we shine
 Superior far to tenants of the pine ;
 This envied boon to man shall still belong,
 Unshar'd by them in substance or in song.

At last the closing season browns the plain,
 And ripe October gathers in the grain ;
 Deep-loaded carts the spacious corn-house fill,
 The sack distended marches to the mill ;
 The lab'ring mill beneath the burden groans,
 And show'rs the future pudding from the stones ;
 Till the glad house-wife greets the powder'd gold,
 And the new crop exterminates the old.

CANTO III.

The days grow short ; but tho' the falling sun
 To the glad swain proclaims his day's work done,

Night's pleasing shades his various tasks prolong,
 And yield new subjects to my various song
 For now, the corn-house fill'd, the harvest home,
 Th' invited neighbours to the *Husking* come ;
 A frolic scene, where work, and mirth, and play,
 Unite their charms, to chase the hours away.

Where the huge heap lies centr'd in the hall,
 The lamp suspended from the cheerful wall,
 Brown corn-fed nymphs, and strong hard-handed beaux
 Alternate rang'd, extend in circling rows,
 Assume their seats, the solid mass attack ;
 The dry husks rustle, and the corn-cobs crack ;
 The song, the laugh, alternate notes resound,
 And the sweet cider trips in silence round.

The laws of husking ev'ry wight can tell ;
 And sure no laws he ever keeps so well ;
 For each red ear a gen'ral kiss he gains,
 With each smut ear she smuts the luckless swains ;
 But when to some sweet maid a prize is cast,
 Red as her lips, and taper as her waist,
 She walks around, and culls one favour'd beau,
 Who leaps, the luscious tribute to bestow.
 Various the sport, as are the wits and brains
 Of well-pleas'd lasses and contending swains ;
 Till the vast mound of corn is swept away,
 And he that gets the last ear, wins the day.

Meanwhile the house-wife urges all her care,
 The well-earned feast to hasten and prepare.
 The sifted meal already waits her hand,
 The milk is strain'd, the bowls in order stand,
 The fire flames high ; and, as a pool (that takes
 The head-long stream that o'er the mill-dam breaks)
 Foams, roars and rages with incessant toils,
 So the vex'd caldron rages, roars, and boils.

First, with clean salt she seasons well the food,
 Then stews the flour and thickens all the flood.
 Long o'er the sim'ring fire she lets it stand ;
 To stir it well demands a stronger hand ;
 The husband takes his turn ; and round and round
 The ladle flies ; at last the toil is crown'd ;
 When to the board the thronging huskers pour,
 And take their seats as at the corn before.

I leave them to their feast. There still belong
 More copious matters to my faithful song.
 For rules there are, tho' ne'er unfolded yet,
 Nice rules and wise, how pudding should be ate.

Some with molasses line the luscious treat,
 And mix, like bards, the useful with the sweet.
 A wholesome dish, and well deserving praise,
 A great resource in those bleak wintry days,
 When the chill'd earth lies buried deep in snow,
 And raging Boreas drives the shiv'ring cow.

Blest cow! thy praise shall still my notes employ,
 Great source of health, the only source of joy;
 How oft thy teats these pious hands have press'd!
 How oft thy bounties prove my only feast!
 How oft I've fed thee with my fav'rite grain!
 And roar'd, like thee, to find thy children slain!

Ye swains who know her various worth to prize,
 Ah! house her well from winter's angry skies.
 Potatoes, pumpkins, should her sadness cheer,
 Corn from your crib, and mashes from your beer;
 When spring returns she'll well acquit the loan,
 And nurse at once your infants and her own.

Milk, then, with pudding, I should always choose;
 To this in future I confine my Muse,
 Till she in haste some future hints unfold,
 Well for the young, nor useless to the old.
 First in your bowl the milk abundant take,
 Then drop with care along the silver lake
 Your flakes of pudding; these at first will hide
 Their little bulk beneath the swelling tide;
 But when their growing mass no more can sink;
 When the soft island looms above the brink,
 Then check your hand; you've got the portion's due,
 So taught our sires and what they taught is true.

There is a choice in spoons. Tho' small appear
 The nice distinction, yet to me 'tis clear,
 The deep bowl'd Gallic spoon, contriv'd to scoop
 In ample draughts the thin diluted soup,
 Performs not well in those substantial things,
 Whose mass adhesive to the metal clings;

Where the strong labial muscles must embrace,
The gentle curve, and sweep the hollow space.
With ease to enter and discharge the freight,
A bowl less concave but still more dilate,
Becomes the pudding best. The shape, the size,
A secret rests unknown to vulgar eyes ;
Experienc'd feeders can alone impart
A rule so much above the lore of art.
These tuneful lips, that thousand spoons have tried,
With just precision could the point decide,
Tho' not in song ; the muse but poorly shines
In cones and cubes, and geometric lines.
Yet the true form, as near as she can tell,
Is that small section of a goose egg-shell,
Which in two equal portions shall divide
The distance from the centre to the side.

Fear not to slaver ; 'tis no deadly sin,
Like the free Frenchman, from your joyous chin
Suspend the ready napkin ; or, like me,
Poise with one hand your bowl upon your knee ;
Just in the zenith your wise head project,
Your full spoon, rising in a line direct,
Bold as a bucket, heeds no drops that fall,
The wide-mouth'd bowl will surely catch them ail.



MAIZE OR INDIAN CORN.

INDIAN CORN.

Synonymes.

<i>Zea mays,</i>	OF BOTANISTS.
Maize, Indian Corn,	BRITAIN AND ANGLO-AMERICA
Maïs, Blé d'Indie, Blé de Turquie,	} FRANCE.
Maiz, Trigo de Indias,	} SPAIN.
Grano d'India, Grano Turco,	} ITALY.
Grano Siciliano,	} PORTUGAL AND BRAZIL.
Maiz, Milho da India,	} PORTUGAL AND BRAZIL.
Milho grande,	} PORTUGAL AND BRAZIL.
Mais, Türkischer Korn,	GERMANY.
Mays, Turksch Koorn,	HOLLAND.
Turkish Hvede,	SWEEDEN AND DENMARK.
Tureskoichljeb,	RUSSIA.

Derivations.—The generic name *Zea* is derived from the Greek *zao*, to live, from the nutritive qualities of this, or some other kind of corn formerly cultivated in Greece or on the adjacent Archipelago. The word *mays*, and all its derivatives, according to Clavigero, have been derived from the denomination of this vegetable in the Haitina language, or that of Hispaniola; but by others, it is thought to come from the Lettish and Livouic *mayse*, which signifies bread in those languages. The European names *Blé d'Indie*, *Trigo de Indias*, etc., have been so called on account of this grain having first been brought by Columbus from America, which was known at that time by the name of the "Indies;" and those names signifying "Turkish Corn," took their origin from the circumstance that the cultivation of this plant spread from Turkey to the neighbouring countries, and consequently led some writers to believe that it first came from the East.

Description.

The fruitful maize, in verdant vistas rear'd,
 Its spire majestic, to the playful breeze,
 Spreading its loosely-waving panicles, while low
 The purple anthers bending o'er to kiss
 The silken, tassell'd stylcs, delight the eye
 Of watchful Ceres. TRAITS OF THE ABORIGINES.

MAIZE, OR INDIAN CORN, consists of several varieties which are thought to owe their distinctive characters to the accidental modifications of climate, soil, and

culture, rather than to any original differences. The plant is described by botanists, as a strong, reedy, jointed stalk, provided with large alternate leaves, almost like flags, springing from every joint. The top produces a bunch of male flowers, of various colours, which is called the *tassel*. Each plant bears, likewise, one or more spikes or *ears*, seldom so few as one, and rarely more than four or five, the most usual number being three; as many as seven have been seen occasionally on one stalk. These ears proceed from the stalk at various distances from the ground, and are closely enveloped by several thin leaves, forming a sheath, which is called the *husk*. The ears consist of a cylindrical substance, of the nature of a pith, which is called the *cob*, over the entire surface of which the seeds are ranged, and fixed in eight or more straight rows, each row having generally as many as thirty or more seeds. The eyes, or germs of the seeds, are in nearly radial lines from the centre of the cylinder; from these eyes proceed individual filaments of a silky appearance, and of a bright-green colour; the aggregate of these hang out from the point of the husk, in a thick cluster, and in this state are called the *silk*. It is the office of these filaments, which are the stigmata, to receive the farina, which drops from the flowers on the top or tassel, and without which the ears would produce no seed,—a fact which has been established by cutting off the top previous to the development of its flowers, when the ears proved wholly barren. So soon as their office has been thus performed, both the tassel and the silk dry up, and put on a withered appearance.

The grains of maize are of different colours, the prevailing hue being yellow of various shades, sometimes approaching to white, and at other times deepening to red. Some are of a deep chocolate-colour, others greenish or olive-coloured, and even the same ears will sometimes contain grains of different colours.

Geography and History.—Indian Corn, when due regard is paid to the selection of varieties, may be accounted as a sure crop, in almost every portion of the

habitable globe, between the forty-third degree of north latitude, and a corresponding parallel south. Its principle culture is confined to the United States, Mexico, the West Indies, and most of the states of South America. It is also cultivated with success in Spain, Portugal, Lombardy, and may be grown in southern Europe generally. It is likewise found to thrive in India, China, Japan, Australia, the Sandwich Islands, as well as in the groups of the Azores, the Madeiras, Canaries, and numerous other ocean isles

Roulin, Humboldt, Bonpland, and others, have noticed this plant in its indigenous state in America, and hence have concluded that it was first derived from this country. Mathioli, Ciega, Zeri, and Inca Garcilasso, have also confirmed this opinion. Fuchs, on the contrary, very early maintained that it came from the East. Michaud, Daru, and Bonafous, state that it was known in Asia Minor before the discovery of America; and Crawford, in his "History of the Indian Archipelago," tells us that maize was cultivated by the inhabitants of these islands, under the name of *djagoung*, long before that period. In the "Natural History of China," composed by Li-Chi Tchén, towards the middle of the XVIth century, a rude figure is given of the *Zea mays*, under the title of *la-chou-cha*; and Rifaud, in his "Voyage en Egypte, &c., from 1805 to 1807," observes, that he discovered this grain in a subterranean excavation in a remarkably good state of preservation. M. Virey, however, in the "Journal de Pharmacie," refutes these statements, by showing that these authors have mistaken the Indian millet (*Sorghum vulgare*) for maize, and that the grain found by Rifaud, was the *Sorghum bicolor*, which, according to Delile, is a native of Egypt. Regmir and Gregory attempt to present fresh arguments in favour of the Eastern origin of this plant. Among them is the name by which it has long been known in Europe, *Blé de Turquie*; and varieties of it, they state, have been brought from the Isle of France, or from China. Moreau de Jonnés, on the contrary, has more recently maintained in a memoir

read before the Academy of Sciences, at Paris, that its origin was in America. The name *Blé de Turquie*, no more proves it to be of Turkish origin, than the name of the *English Horse Bean* proves that that plant originally grew wild in Britain. The general cultivation of maize, in southern Europe, and the production of some new varieties, proves nothing with regard to the origin of the species. Nor, where it occurs in the East, there is no proof of its having been carried there previously to the discovery of America.

In favour of the American origin of maize, is the fact that it was found in a state of cultivation in most of the places where the first navigators landed. Columbus discovered it on the Island of Cuba, and other points, where he touched on his first voyage to America, Vasco Nuñez, in Guiana, Navaez and Sottus, in Florida, and Gonçalo Ximines, in New Granada,—the latter of whom, says, “The principal food of the natives
“ was *Maiz* and *Cassave*, which first grows on stalks
“ of the size of canes, bearing very large and weighty
“ spikes or ears, each generally yielding seven hundred
“ grains—a bushel of which, when planted in warm,
“ moist land, frequently produces three hundred fold.
“ The maize is distinguished into a coarser and a finer
“ sort, which last is called *Moroche*, the leaves and
“ stalks affording wholesome provender for horses, and
“ the grains or kernels, bread for the inhabitants, who
“ make it several ways; for sometimes they boil the
“ corn in water, and at other times, parch it in ashes,
“ or grind it into flour, which, when kneaded into
“ dough, they make into cakes, biscuits, etc. More-
“ over, maize steeped in water, boiled, and afterwards
“ fermented, makes a very strong liquor.”

All the early historians, both of North and South America, give the strongest testimony that this grain is of American origin, and speak of it as having constituted a great part of the food of the Indians from time immemorial.

Inca Garcilasso de la Vega, in treating of the products of Peru, says, “Of the fruits that grow above

“ground, the chief and principal, is that grain which
“the people of Mexico and Barlovento call *Mayz*, and
“those of Peru, *Cara*, being the only bread they use.
“And this is of two sorts, one called *Muruchu*, which
“is hard, and the other *Capia*, which is tender and
“fine, and is eaten as bread, either boiled, baked, or
“parched, over the fire. The hard kind is that which
“has been brought to Spain, but not the fine and tender
“sort.” The corn of the Incas, he says, was ground by
women, between two broad stones in the form of a half
moon, from the flour of which, they made a kind of
hasty-pudding, called *Api*, a great dish among them,
esteemed as high feeding, but was not common at every
meal. He mentions another kind of bread, made of
maize, called *Cara*, upon which he was nourished for
nine or ten years. This consisted of three sorts,
namely, *Cancu*, used only for sacrifice; *Huminta*, for
feasts and great entertainments; and *Tanta* or bread
of common use. Boiled *cara* they called *Muti*, which
is also the name of boiled corn. The virgins or wives
of the Sun, were employed in the evening in kneading
great quantities of dough, which they formed into
small round cakes that were eaten by the Indians only
at the feasts of *Raymi* and *Citua*; for, at other times,
they never eat their maize kneaded into bread, nor did
they eat it at their meals, with the exception of two or
three mouthfuls at the beginning. Their physicians
prescribed no other diet to their sick than what was
made of maize. They also made plasters or poultices
of it, which they applied for the relief of aches, colics,
and other pains. Of the flour of maize, mixed with
water, the Indians brewed their common beverage,
which, by a certain process, they were able to convert
into an excellent vinegar. Of the stalks, before the
maize was ripe, they made a kind of honey, and some,
who loved to be drunk, lay their corn steeping in
water, until germination took place, and then, after
grinding, boiled it in the same water, drew it off, and
kept it until stale. This was the strongest drink the
Peruvians had, which was called, in their language,

Vinnapu, and by some of the neighbouring tribes, *Sora*. From its intoxicating effects, its use was prohibited by the Incas, who made it a penal offence with all who drank to excess.

Francisco Saverio Clavigero, in describing the grain of Mexico, says, "The chief, the most useful, and most common, was the maize, called by the Indians *Tluolli*, of which there are several varieties, differing in size, colour, weight, and taste. There is the large and the small sort, the white, the yellow, the blue, and the black."

Captain John Smith, in his account of the Indians of Virginia, says, "The greatest labour they take, is in planting their corne, for the country naturally is overgrowne with wood. To prepare the ground, they bruise the barke of the trees neare the root, then doe they scortch the roots with fire that they grow no more. The next yeare with a crooked peece of wood they beat vp the weeds by the rootes, and in that mould they plant their corne. Their manner is this. They make a hole in the earth with a sticke, and into it they put foure graines of wheate (maize), and two of beanes. These holes they make foure foote one from another. Their women and children do continually keepe it with weeding, and when it is growne middle high, they hill it about like a hop-yard. In Aprill they begin to plant, but their chiefe plantation is in May, and so they continue till the midst of Iune. What they plant in Aprill, they reape in August: for May in September; for Iune in October. Every stalke of their corne commonly beareth two eares, some three, seldome any foure, many but one, and some none. Every eare ordinarily hath betwixt 200 and 500 graines. The stalke being greene hath a sweet iuice in it, somewhat like sugarcane, which is the cause that when they gather their corne greene, they sucke the stalkes; for as we gather greene pease, so doe they their corne, being greene, which exçelleth their old. * * * * * Their corne they rost in the eare greene, and bruising it in mortar

“ of wood with a polt, lap it in rowles in the leaues of
 “ their corne, and so boyle it for a daintie. They also
 “ reserue that corne late planted that will not ripe, by
 “ roasting it in hot ashes, the heat thereof drying it.
 “ In winter they esteeme it being boyled with beanes
 “ for a rare dish, they call *Pausarowmena*. Their old
 “ wheat (maize) they first steepe a night in hot water,
 “ in the morning pounding it in a mortar. They vse a
 “ small basket for their temmes (sieve), then pound
 “ againe the great, and so separating by dashing their
 “ hand in the basket, receiue the flower in a platter made
 “ of wood, scraped to that forme with burning and
 “ shels. Tempering this flower with water, they make
 “ it either in cakes, covering them with ashes till they
 “ be baked, and then washing them in faire water, they
 “ dric presently with their owne heat: or else boyle
 “ them in water, eating the broth with the bread which
 “ they call *Ponap*. The groutes and peeces of the
 “ cornes remaining, by fanning in a platter or in the
 “ wind, away, the branne they boyle 3 or 4 houres with
 “ water, which is an ordinary food they call *Vstata-*
 “ *hamen*. But some more thriftie then cleanly, doe
 “ burne the core (cob) of the eare to powder, which
 “ they call *Pungnough*, mingling that in their meale,
 “ but it never tasted well in bread, nor broth.”

Mr. Schoolcraft, in his late Report, says, that it is
 conceded on all hands, that this is a tropical, or at least,
 a southern plant. He remarks, that it was not known
 in Europe before the discovery of this country, and
 that we learned the mode of cultivation from the
 Indians, and not they from us. It was cultivated by
 the Iroquois in fields sufficiently large to entitle
 them to the name of agriculturists. It was un-
 doubtedly highly prized by them, as an essential
 article of support, as Mr. Schoolcraft states that the
 warriors of the Six Nations were in the habit of under-
 taking journeys of thousands of miles in extent, carry-
 ing no other food than a little meal from parched and
 pounded corn, relying on the forest for meat. One
 tablespoonful of this meal, mixed with a little sugar

and water, will sustain a warrior for a fortnight without meat.

In further proof of the American origin of maize, it may be stated, that it is still found in an indigenous state from the Rocky Mountains, in North America to the humid forests of Paraguay; where, instead of having each grain naked, as is always the case after long cultivation, they are completely covered with glumes or husks. Although there has been much written upon the Eastern origin of this grain, it did not grow in that part of India watered by the Indus, at the time of Alexander the Great's expedition, as it is not mentioned by Nearchus, the commander of the fleet, among the productions of that country. It is not noticed by Arrian, Diodorus, or Columella; and even so late as the year 1471, Joan. Cuba, in his "Ortus Sanitatis," a very curious treatise on plants, trees, animals, stones, &c., does not make the least mention of it. Neither has it ever been found in any ancient tumulus, sarcophagus, or pyramid; nor has it ever been represented in any ancient painting, sculpture, or work of art, except in America! But in this country, according to Garcilasso, the palace gardens of the Incas in Peru were ornamented with images of gold and silver, of all manner of beasts, birds, trees, flowers, and fruit. Some of the trees appeared in blossom, some with their fruit partially or fully grown, and in others it appeared quite ripe, according to the several seasons of the year. They also imitated the maize, with all its grains, spikes stalks, and leaves; and in one instance, in the "Garden of Gold and Silver," there was an entire cornfield, of considerable size, represented with the corn in its exact and natural shape.

The introduction of maize into Europe, probably dates back to the time soon after Columbus discovered America; but little attention appears to have been paid there, either to its culture or use, until toward the close of the last century. An amusing, and in many respects, an instructive work, was published some years since, by William Cobbet, upon the merits of Indian

corn, whose sanguine wishes upon the subject of its introduction as a field crop into England, led him farther than most people have been inclined to accompany him. A cotemporary writer remarks that, "Cobbett was corn-mad at one time. He saw too soon by twenty years, and depended on cultivation, rather than importation. He wrote about Indian corn, planted Indian corn, raised Indian corn, ate Indian corn, made paper of Indian corn husks, and printed a book from the Indian corn paper." There is to be seen in this work a very minute and interesting account of the various manipulations which must be attended to by the maize-grower before his grain is ready for sale, as well as very particular directions for turning the produce to the best and most profitable account in domestic economy.

The most important feature, perhaps, in the history of maize, is its late introduction from the United States into Great Britain and Ireland, as a cheap and nutritious article of human food. For this patriotic and philanthropic act, these two nations are highly indebted to the simultaneous exertions of our friend and countrymen, Henry Coleman, Esquire, who has been engaged for several years in making an agricultural tour in Europe, and Dr. John S. Bartlett, late of the British army, the latter of whom, addressed a letter on the subject, in May, 1842, to Lord Ashburton, in which he arrives at the following deductions:—

1st. That the labouring classes and the poor of Great Britain require *a cheaper article of food than wheaten bread.*

2nd. That although wheat contains a larger portion of *gluten* or the nutritive ingredient, *bulk* is necessary, not only to satisfy the craving of hunger, but to promote digestion by the "stimulus of distension," which bulk alone can give.

3rd. That the craving of hunger being removed or alleviated by the quantity taken, the mind is more at ease; the mental irritability consequent upon hunger is assuaged, and man goes to his labour with cheer

fulness and vivacity, becoming a more peaceful citizen and perhaps a better man.

4th. That maize possesses a great superiority over rye, barley, oatmeal, or potatoes—not that it contains a greater quantity of *gluten*, but that its constituent parts are better proportioned, and consequently make a better article of food.

5th. That, admitted into England duty free, it would be a cheaper article of food than any of those above named, besides being vastly superior to them in nutritive and healthful properties.

6th. That it can be obtained in any quantities from all parts of the United States, and particularly from the middle and southern states, on the Atlantic sea-board—as New York, New Jersey, Pennsylvania, Maryland, Virginia, and North Carolina, whose proximity to the sea and ports of shipment, give them great advantages by saving inland conveyance. The whole valley of the Mississippi also yields it in abundance.

7th. That the people of all parts of the United States are consumers of British manufactures; for in spite of national asperities, they adopt the habits, tastes, fashions, and dress of their English ancestors. This, I think, is a natural feeling in the human breast, for I never yet knew a son who was offended by being told that he resembled his parent. The imported grain then would be paid for in the products of British industry.

8th. That the rapidly increasing population and limited superficial surface of the British Isles, will speedily render a foreign supply of grain necessary even in the most productive seasons—and consequently a reduction of duties must ensue; it is therefore advantageous to the agricultural interests, as land is becoming so valuable, to reserve as much of the soil of England as possible for the cultivation of wheat and more valuable products; and nothing will tend to promote this object more than the introduction of a copious supply of cheaper farinaceous food for the poor and labouring classes.

In closing the historical part of this memoir, it may not be uninteresting to allude to another countryman of ours, Elihu Burritt, commonly called "The Learned Blacksmith," who is at present engaged in making a pedestrian tour in various parts of Europe, and giving the result of his observations in the "Christian Citizen," from which we make the following extract:—

I have just got out "An Olive Leaf, from the Housewives of America, to the Housewives of Great Britain and Ireland, or Recipes for making Various Articles of Food, of Indian Corn Meal," containing all the recipes I received before leaving home from our kind female friends in different parts of the Union—heaven bless them! I have had 2,000 of these Olive Leaves struck off, and intended, in the first place, to send a copy to every newspaper in the realm. I shall have a thousand, all of which I shall put into the hands of those I meet on the road. I have resolved to make it a condition upon which only I consent to be any man's guest, that his wife shall serve up a johnny-cake for breakfast, or an Indian pudding for dinner. I was invited yesterday to a tea party which comes off to-night, where about thirty persons are to be present. I accepted the invitation with the johnny-cake clause, which was readily agreed to by all parties. So to-night the virtues of corn meal will be tested by some of the best livers in Birmingham.

Mythology.—The Indians of Peru and the adjacent country, who existed before the empire of the Incas began, were at best but tamed animals, and often they were more brutish than the beasts of the field. They possessed no right of property, no fixed laws, no religion, nor government; neither did they plough, sow, or till the earth, nor did they understand the art of weaving cotton or wool; but dwelt together in small hordes as they happened to meet in caves or holes in the rocks and mountains, subsisting on grass, herbs and roots, wild fruits, and the flesh of man, with no other clothing than the leaves and bark of trees, and the skins of beasts. In short, they were altogether savage.

As ever has been the case with most of the primitive tribes of the human race, these Indians derived their original being from divers objects, animate or inanimate, of which they entertained respect, admiration, or awe. Some who lived near a great lake which supplied them with a store of fish, called that the parent whence they emerged ; some esteemed the mighty Andes as their prime mother, who, from her deep caverns, first gave them birth ; and others fancied themselves to be the descendants of the great bird, condor, in token of which, on days of solemnity and festival, they wore its wings fastened to their arms.

Every nation, province, tribe, and house among them, had its particular idol. For their opinion was, that one god would have enough to do, to take care of its own province, or family, and that its power was so limited, that it could have no virtue or extent within the jurisdiction of another. Some adored whatever they saw in which an excellence could be observed, whether good or bad. The tiger, the jaguar, and the bear, they worshipped for their ferocity, and with such submission and humility, that they would not fly from them in time of danger, but offered themselves to be devoured. The fox and the monkey, they adored for their craft ; the stag for his swiftness ; the hawk, for agility and courage ; the eagle, for acuteness of sight ; while other nations were more considerate in the choice of their deities, and worshipped nothing except what afforded them benefit or advantage. As fountains and cool springs, which furnished them with drink ; rivers, that watered their pastures ; the earth, which they called their mother, because it yielded them food ; the air, because it gave them breath and life ; and fire, because it warmed them, and cooked their food. Some, also, made choice of sheep, cattle, or corn, and everything around them, that served most for nourishment, as a god, and worthy of divine honour. The inhabitants near the coast, made the sea their god, the name of which, interpreted in their language, signifies the "Mother Sea." The whale they deified on account of its pro-

igious size. In the Province of Puerto Viejo, they had a high veneration for the emerald; and near the Cordillera, they worshipped that mountain for its stupendous height.

The sacrifices which they made to these deities were often as barbarous as the gods were senseless; for, besides beasts, fruits, and corn, they sacrificed and devoured alive, men and women of all ages, whom they had taken in war. But other Indians less cruel, and more mild in their character, though they mingled blood with these rites, never took away life, but drew it from the veins of an arm, a leg, or the nostrils, according to the nature or solemnity of the sacrifice required. Others offered sheep and lambs, conies, partridges, and various kinds of fowl, herbs, fruits, and maize, so much esteemed among them, according to the deity they adored.

These people, living and dying in the manner above described, were at length reclaimed by Inca Manco Capac, who, probably, was some Indian of a more elevated understanding and prudence than ordinary, and who, by carrying a refined manner of deportment toward them, had persuaded them that he and his wife, Mama Oello Hauco, proceeded from the sun, and were come from heaven; and that his Father, Pachacamac (the Soul of the universe, or the Sustainer of all things), had sent them to instruct and bestow benefits upon the rest of mankind. Manco Capac was the founder of the *Incas*, who were the native kings of Peru, and who, according to tradition, reigned in a direct lineage, until they were conquered by the Spaniards, for the space of four hundred years. The origin of these kings, the majesty and greatness of their empire, their conquests and policies in government, both in peace and in war, together with the laws they instituted for the good and benefit of their subjects, have been recorded by one of their own descendants on the maternal side, Garcilasso de la Vega, surnamed the Inca. Concerning the origin of these kings, he says, that, when he was about seventeen years of age, being one day present with his

kindred in the imperial city of Cuzco, who were discoursing of their ancestors, it came into his mind to ask the most elderly person amongst them, by interrupting him in his discourse, the following questions:—"Inca and my uncle," said I, "How is it possible, since you have no writings, that you have been able to preserve the memory of things past, and the origin of our kings? I observe that the Spaniards and their kindred nations have their sacred and profane histories, whereby they learn the time that their own kings, and the princes of other countries began their reigns; when and how empires were changèd and transferred; nay, so far they go, as to tell us how many thousand years are past since God created the heavens and the earth; all of which, and much more, they have learned from their books; but as to yourselves—In what manner can you retain the memory of your ancestors, or be informed of the origin of the Incas? As, for instance, who was the first of them, or what was his name? Of what lineage, or in what manner did he begin his reign? What nations did he conquer, and when did he give a being to this great empire, and with what exploits did our ancestors achieve their greatness?"

"The Inca was much pleased to hear me make these inquiries, because he took great delight in recounting these matters, and turning to me, said, 'Cousin, I most willingly comply with your request; for it concerns you to hear them, and keep them in your heart. Remember, then, that in ages past, all this region or country, you see around us, was nothing but mountains and wild forests, and the people in those times were like so many brutes, without any religion or government, with no understanding of property, or a single enjoyment of them; neither did they sow, plough, nor clothe themselves, because they had no idea of tilling the earth, and knew not the art of weaving either cotton or wool. They dwelt two by two, or three and three together, as they chanced to meet, in caves, or holes in the rocks and mountains.

‘ Their food was herbs or grass, roots of trees, wild
‘ fruits, and human flesh ; and all the covering they
‘ had, consisted of the leaves or bark of trees, and the
‘ skins of beasts.

‘ And now, I pray that you listen with due atten-
‘ tion, for I would not be troubled to repeat what I
‘ am to say. Our Father, the Sun, beholding these
‘ Indians as they existed in the state that I have just
‘ related, took compassion on them, and sent a son and
‘ a daughter of his own from heaven to earth, to in-
‘ struct our people in his knowledge, so that they
‘ might worship and adore him, and esteem him as their
‘ God, giving them laws and precepts, unto which
‘ they might conform their lives like men of reason
‘ and refinement of manners, that they might live
‘ in houses and society, learn to till the earth, culti-
‘ vate trees, plants, and corn, feed their flocks, and
‘ enjoy them as rational men, and not as brutes.
‘ With these orders and instructions, our Father, the
‘ Sun, placed his two children by the Lake Titicaca,
‘ giving them liberty to go which way they pleased,
‘ and that, in what place soever they stopped to eat, or
‘ sleep, they should strike a little wedge of gold into
‘ the ground, which was about half a yard long, and
‘ two fingers thick, and where, with one stroke this
‘ wedge should sink into the earth, there should be the
‘ place of their abode, and the court unto which all
‘ people should come. Lastly, he ordered that when
‘ they should have subjected these people to the rules
‘ of obedience, they should maintain them with reason,
‘ justice, piety, clemency, and gentleness, performing
‘ all the good offices of indulgent parents towards the
‘ children they love ; and that in imitation of him,
‘ and by his example who doeth good to all the world,
‘ by affording them light to perform their work,
‘ and the actions of life ; warming them when they
‘ are cold ; making their pastures and their seeds to
‘ grow, their trees to fructify, and their flocks to in-
‘ crease ; and watering their lands with timely dews.
‘ And in order to manifest h’s earthly care, he said,

‘ every day I take a turn around the world to see and
‘ discover the wants and necessities of all things, in
‘ order that, as their true fomentor and parent, I may
‘ apply myself to their succour and redress. Thus,
‘ after my example, and as my children, sent upon
‘ the earth, I would have you imitate me, and to instil
‘ such doctrine into this people as may convert them
‘ from beasts unto men. And henceforth I constitute
‘ and ordain you king and queen over this nation,
‘ that by your instructions, reason, and government,
‘ they may be preserved. After our Father, the Sun,
‘ had thus declared his pleasure to these, his two
‘ children, he dispatched them from him; and, in
‘ taking their journey northward from Titicaca, at
‘ every place where they came to repose, they tried to
‘ strike their wedge into the ground, but to no effect;
‘ but, at length they arrived at a little inn or place of
‘ rest, in the valley of Cuzco, where they again struck
‘ their wedge of gold into the earth, which received it
‘ with the greatest ease, and which sucked it in, and
‘ they saw it no more. Then, said the Inca to his
‘ sister and wife—in this valley, our Father, the Sun,
‘ hath commanded that we should stay, and make our
‘ abode, and in so doing we shall obey his will; in
‘ pursuance whereof, it is necessary that we now
‘ separate from each other, and take different ways
‘ that we may assemble and draw the people together
‘ in such manner as we may be able to preach and
‘ propagate the doctrine among them, which has been
‘ committed to us. Our Inca, accordingly, took his
‘ way northward, and his wife to the southward, and
‘ to all the men and women, whom they met in the
‘ wild forests and uncultivated places, they declared to
‘ them that their Father, the Sun, had sent them to be
‘ teachers and benefactors, and to deliver them from
‘ the savage life they led to another, more agree-
‘ able to reason, justice, and humanity. And in fur-
‘ ther pursuance of the commands of our Father, the
‘ Sun, they had come to gather these people from the
‘ mountains and rude places, to more convenient

habitations, where they might live in human society, and subsist upon such food as was appropriated to man, and not to beasts. These, and similar declarations were announced to such savages as they met in the mountains and deserts, who, in beholding the grace of their countenances, the jewels, and the gay attire with which these two persons were adorned, and in listening to the gentleness and sweetness of their words, acknowledged them to be the true Children of the Sun, and such as were appointed to cause their people to assemble into societies, and to administer such kinds of food as were wholesome, and adapted to human sustenance. They were struck with such admiration at the sight of their figure and person, and allured with the promises they made them, that they gave entire credence to their words, obeyed them as their princes, and adored them as superior beings. And these poor wretches, relating these sayings one to another, the fame so increased, that great numbers, both men and women, flocked together, and were willing to follow to what place soever they should guide them.

Thus, great multitudes of people being assembled together, the princes commanded that provision should be made of such fruits as the earth produced for their sustenance, lest they should be scattered abroad again in small numbers, to gain their food. Our Inca taught some of his subjects those labours, which appertain unto men, as to build houses, plough, sow the land with maize and divers sort of seeds, that were useful or fit for food; to which end he instructed them how to make ploughs and other implements necessary for the purpose; he showed them also how to make aqueducts and reservoirs for holding water, and various other arts tending to the more commodious well-being of human life. He employed others to gather and tame the llamas and more gentle sorts of cattle into flocks, which ran dispersed and wild through the mountains and woods, that garments might be made of their wool, and shoes of their

‘skins. On the other hand, Coya Mama Oello instructed the women the art of spinning and weaving both cotton and wool, to make garments for their husbands, their children, and themselves, with various other offices appertaining to a house. In short, nothing was omitted that would conduce to human welfare, which she did not teach her women, and the Inca his men.

‘Being reduced in this manner, these Indians looked on themselves as much bettered in their condition; and with signal acknowledgments of the benefits received, travelled with joy and satisfaction through the rocks and woods, to communicate the happy tidings of the Children of the Sun, who, for the common good of all, appeared on the earth, repeating the benefits they had received, and showing them their new habiliments, and diet, and relating to them that they lived in houses and in political society. This relation induced these wild people to mingle with their civilized brethren, in order to learn and obey; and thus, one calling and inviting the other, the fame spread far and near, and their number increased to such a degree, that in six or seven years, the Inca had composed an army sufficient for war; and having taught them how to make bows and arrows, lances, and such other weapons as we use to this day, they were not only capable of defending, but also to repulse an enemy, and to compel those by force, who led a bestial life, to live in human society.

‘These were our first Incas and kings in the earlier ages of our empire, from whom the succeeding princes, and we ourselves, are descended; but how many years it may be since our Father, the Sun, sent his offspring amongst us, I am not able precisely to say, but I imagine that it may be about four hundred years.

‘And thus having satisfied the request you made to me, at length, dear cousin, allow me to close by telling you, that in the course of my narrative, in order

‘that I might not incline you to sadness, I abstained
‘from venting tears from my eyes, which, notwith-
‘standing, drop in blood on my heart, caused by that
‘inward grief I feel, to see our Incas, and their empire
‘ruined and destroyed.’”

To this legend, many others of ancient date might be added, one of which, is, that the rays of the sun, after the universal deluge, first fell on the island in Lake Titicaca, before they appeared in any other place, and gave a sign and promise that from that spot the first doctrines of the light of knowledge should emanate, which promise was afterwards accomplished by those kings, who preceded them, and taught the world to throw off their turpitude, and live according to the dictates of nature and of reason. By advantage of these, and other similar inventions, it was not difficult for the Incas to persuade the rest of the Indians, that they actually descended from the sun, and to confirm their belief by the manifold benefits and advantages which their doctrine and religion brought with them. On the assurance of these two fables, it is said, the Incas and all their subjects did really esteem this island to be a sacred and holy piece of ground, upon which, with that opinion, they erected a rich temple, all plated with gold, to be dedicated to their Father, the Sun; where all the Indians of the provinces, subject to the Incas, generally assembled once a year to offer gold, silver, and precious stones, in thankful acknowledgments of the great blessings they had received. And so immense was the quantity of gold and silver, which was amassed in that island, besides what was cast and wrought into utensils, for the service of the temple, that the report of it made by the Incas, is incredible, and is more to be admired than believed. Blas Valera, a Spanish historian, in speaking of the riches of this temple, says, that after all the vessels and ornaments were supplied, he was told by the Indians of Copa-Cabano, that there was such a superfluity of gold and silver, after all was finished, that another such temple might have been erected without the aid of any other materials! And

that, so soon as the Indians had news of the invasion of the Spaniards, and were informed that their object was to despoil them of their treasures, they demolished their temple, and threw all the fragments and the immense wealth appertaining thereto, into the great lake.

Those Lucas, besides the riches they bestowed, and the encouragement they gave for the adornment of this temple, did much to improve the sterile land of this isle, so as to render it more fertile, and fit to produce fruit; and, in gratitude to the place, on which they believed their ancestors to have descended from heaven, they ennobled it by bringing it into the highest state of fertility and the best of husbandry. To this end they levelled and cleared it of rocks and stones, made gardens and covered them over with good earth and manure brought from afar, and thereby made the ground capable of producing maize, which, by reason of its elevation and its consequent coldness of climate, would not grow in the country adjacent. This grain, with flax and other seeds, they sowed in the gardens they had made, which yielded good increase, the fruits of which they sent as sacred presents to the temple of the sun, and to the select virgins, at Cuzco, with orders to distribute them in all other sacred places throughout the dominions. One year they sent presents to Cuzco, the next to another place, and the third year somewhere else, which were held in high esteem, as sacred relics, sowing some in the gardens belonging to the temples, and other public houses, and others they divided among the people. A portion of the grain they cast into the public granaries, and those of the sun and of the king, believing that some divine virtue was contained in it, and that it would bless and increase the corn with which it was mixed, preserve it from corruption, and render it more wholesome for human sustenance; and that Indian who was so happy as to be able to get but one grain of this maize, to throw into his heap, was possessed with the belief that he should never be in want for bread in the course of his life.

During the high feast, *Capacrayni*, held in the first month, *Raymi*, agreeing with our December, no stranger was suffered to lodge in Cuzco, to which they again all assembled as soon as the festival was over, to receive cakes made of maize and the warm blood of a white alpaca, by the *Mamacunas*, (select virgins,) and distributed by certain priests, who, in carrying them about in dishes of gold, gave each of the Indians one, saying as they delivered it, "If you do not reverence the sun and Inca, this food will bear witness against you to your ruin; but if you worship them, then their bodies, by this pledge, will be united to yours." After which, those that had eaten of the cakes, promised obedience, and thanked the sun and Inca for their food.

In the beginning of the month *Hatuncuzqui*, which corresponds to our May, the Peruvians gathered their maize and kept the feast *Aymorai*. They returned home, singing from the fields, carrying with them a large heap of maize, which they called *Perua*, wrapping it up in rich garments. They continued their ceremonies for three nights, imploring the *perua* to preserve their harvest of maize from any damage that might chance to befall it, and also to cause that to grow prosperously which they should next plant. Lastly, their sorcerers consulted their gods whether the *perua* could last till the next year; and if they did not answer in the affirmative, they carried it into the fields and burned, or parched it with the view of making a new *perua*, which they bore to their granaries in great triumph, and mingled it with other corn.

The corn-plant, or its fruit, also entered into the forms, the ceremonies, and the mythology of many other tribes, which, from the limited length of this memoir, and the want of accurate information on the subject, are necessarily omitted. The following allegory, however, which was related to Mr. Schoolcraft by the Odjibwas, will be read with interest by all who have a fondness for this branch of literature:—A young man went out into the woods to fast, at that period of life when youth is exchanged for manhood.

He built a lodge of boughs in a secluded place, and painted his face of a sombre hue. By day he amused himself in walking about, looking at the various shrubs and wild plants, and at night he lay down in his bower, which, being open, he could look up into the sky. He sought a gift from the Master of Life, and he hoped it would be something to benefit his race. On the third day he became too weak to leave the lodge; and as he lay gazing upwards he saw a spirit come down in the shape of a beautiful young man, dressed in green, and having green plumes on his head, who told him to arise and wrestle with him, as this was the only way in which he could obtain his wishes. He did so, and found his strength renewed by the effort. This visit and the trial of wrestling were repeated for four days, the youth feeling at each trial, that, although his bodily strength declined, a moral and supernatural energy was imparted, which promised him the final victory. On the third day his celestial visitor spoke to him. "Tomorrow," said he, "will be the seventh day of your fast, and the last time I shall wrestle with you. You will triumph over me, and gain your wishes. As soon as you have thrown me down, strip off my clothes, and bury me in the spot, in soft fresh earth. When you have done this, leave me, but come occasionally to visit the place, to keep the weeds from growing. Once or twice cover me with fresh earth." He then departed, but returned the next day, and, as he had predicted, was thrown down. The young man punctually obeyed his instructions, in every particular, and soon had the pleasure of seeing the green plumes of his sky visitor, shooting up through the ground. He carefully weeded the earth, and kept it fresh and soft, and in due time was gratified by beholding the matured plant, bending with its yellow fruit, and gracefully waving its green leaves and yellow tassels in the wind. He then invited his parents to the spot, to behold the new plant. "It is mondamín," replied his father "it is the spirit's grain." They immediately prepared a feast, and invited their friends to partake of it, and this is the origin of Indian corn.

Properties and Uses.—There is no species of the *Cerealia*, which manifests itself under such varied forms, sizes, colours, and chemical ingredients, as maize. While some persons have estimated it in value, equal, if not superior, to all other kinds of grain, others, on the contrary, have placed it in the lowest station in the group to which it belongs. It has been contended by some that it contains no gluten, and little, if any, ready-formed saccharine matter, and hence, could possess but a very small nutritive power, while others have observed that domestic animals, which are fed on maize, very speedily become fat, with their flesh, at the same time, remarkably firm; that horses, which consume it, are enabled to perform their full portion of labour, are exceedingly hardy, and require but little care; and that the inhabitants of the countries where it forms a large share of their food, are, for the most part, strong, healthy, and long-lived. The investigations of vegetable chemistry, however, have more recently revealed to us many important and interesting facts on these points, yet our knowledge on the subject is far from being complete.

According to Marabelli's analysis of *Zea mays*, made twenty or thirty years ago, it contains a saccharine matter of different degrees of purity, from which alcohol, the oxalic and acetous acids may be obtained; a vegetable amylaceous substance; a glutinous substance; muriate and nitrate of magnesia; carbonates of potash, lime, and of magnesia; and iron.

According to the analysis of M. Payen, maize consists of the following ingredients. One hundred parts by weight yielded

Starch, - - - - -	28.4
Nitrogenized matter, - - - - -	4.8
Fatty matter, (oil,) - - - - -	35.6
Colouring matter, - - - - -	0.2
Cellular tissue, - - - - -	20.0
Dextrine, - - - - -	2.0
Various salts, - - - - -	7.2
Loss, - - - - -	1.8
	<hr/>
	100.0

The proportion of oil is evidently overrated in this analysis, and the error is attributed by Dr. Jackson to the solubility of the *zeine* or gluten of the corn in ether, which Payen used to dissolve the oil. The gluten being taken up by this process, was mistaken for oil, and credited in the analysis as such, when it should have been put under the head of nitrogenized matter. It is not surprising, he remarks that M. Dumas, in quoting this analysis, should observe that “individuals who eat corn for some time, present symptoms of an accumulation of fat in their tissue, which will not appear astonishing, when we consider that a bushel of corn would yield a quart (litre) of oil!” If this doctrine were true, those Americans, who derive a great part of their subsistence from Indian corn, would be an excessively fat people.

According to the analysis recently made in England by Professor Playfair, some specimens of corn of American growth, yielded, in one hundred parts by weight, the following proportions:—

Proteine,	- - - - -	7
Fatty matter,	- - - - -	5
Starch,	- - - - -	76
Water,	- - - - -	12
		<hr/>
		100

By this analysis it would seem that maize contains less proteine or nutritive matter, than wheat, oats, or barley, but more than either rice or potatoes. In fact, it contains about three and a half times the quantity of nutritive matter that is found in potatoes, and a much larger proportion of starch, and less water. It also contains more fatty matter than any of these products, which is a very important consideration where the mere fattening of animals is taken into account. Hence, as an article of food, either for man or animals, it is superior to potatoes and rice, but inferior to wheat, oats, or barley. It is relished by all animals that are not exclusively carnivorous, and certainly is highly nutritious.

According to the researches of Dr. Charles T. Jackson, of Boston, who stands præminent as a chemist, Indian corn, in general, is composed of variable proportions of starch, dextrine, gum or mucilage, sugar, gluten, oil, the phosphates of lime and magnesia, with a little phosphoric acid, silica, potash, and oxide of iron. Some varieties, however, are nearly or quite destitute of gluten, oil, or the salts of iron.

Among the curious results of Dr. Jackson's experiments, he proved that the relative proportions of phosphates in grain, depend on the assimilating power of each species, or variety; for an ear of corn having been selected, which had on it two different kinds, namely, the Tuscarora and the sweet corn, more than double the amount of phosphates were obtained from the latter than from the former, notwithstanding the kernels came from the same ear, grew side by side from the same sap, and were derived from the same soil. Hence it may be inferred that a crop of sweet corn will sooner exhaust a soil of its phosphates than any other variety, and if a soil be deficient in these materials, more must be added to produce it in perfection. Some interesting facts were also noticed by him in the variable proportions of phosphates in different varieties of the same species of several kinds of grain, and a greater preponderance of them was observed in Indian corn, than in the smaller grains, as barley, oats, wheat, &c.—a fact which seems to explain their peculiar properties as food for animals; for the more highly phosphatic grains appear to be more likely to surcharge the system of adult animals with bony matter, often producing concretions of phosphate of lime, like those resulting from gout. It is conjectured that the stiffness of the joints and lameuess of the feet, common in horses, which have been fed to freely with maize, is caused by the preponderance of the phosphates. Granting this to be true, young animals cannot fail to derive more osseous matter from corn than from any other kind of grain.

The horny or flinty portions of corn, when viewed in

thin sections under a good microscope, will be found to consist of a great number of six-sided cells, filled with a fixed oil, which has been successfully employed for the purposes of illumination. It is stated that a distillery has been established in the vicinity of Lake Ontario, where this oil is extracted, at the rate of sixteen gallons from one hundred bushels of corn, leaving the remaining portion of the corn more valuable and in better condition for distillation than before the oil is extracted. On this oil depends the

POPPING QUALITIES OF CORN.

For, when the kernels are heated to a temperature sufficiently high to decompose the oil, a sudden explosion takes place, and every cell is ruptured by the expansion of gaseous matters arising from the decomposition of the oil, and the formation of carburetted hydrogen gas, such as is sometimes used in lighting large cities, the grain being completely evolved and folded back, or turned inside out. This property is remarkably strong in the pop corn, and is common, in a greater or less degree, in all kinds of corn that abound in oil; but those varieties destitute of a horny covering, as the Tuscarora, and white flour-corn, will not pop under any circumstances whatever.

This change in corn is one of considerable importance, so far as regards facility of digestion; for, after the decomposition or extraction of this oil, it is more readily digested by man, though less fattening to poultry, cattle, swine, &c.

One important use of the oil in corn is undoubtedly to prevent the rapid decomposition of the kernels, when sown in the soil, and to retain a portion of pabulum or food, until needed by the young plant, and is always the last portion of the grain taken up. It also serves to keep meal from souring, as it has been observed that a flint-corn meal will keep sweet for years, even when put up in large quantities, without being kiln-dried; while the meal of Tuscarora corn will become sour in a very short time.

The colours of Indian corn usually depend on that of the epidermis or hull, and sometimes on that of the oil. If the epidermis be transparent, the colour may depend either upon the oil, or the combined particles of which the corn is composed; but if the hull be opaque, the grain will present the same colour. For example, the yellow colour of the golden Sioux is derived from the yellow colour of the oil; and the Rhode Island white flint-corn on the colourless particles of its starch and oil, which are distinctly seen through its transparent hull; but red and blue corn owe their lively hues to the colours of their epidermis, and not to the oil.

The proportions of oil in corn, as far as it has been examined, varies from an entire absence to eleven per cent., according to the varieties employed.

When corn is hulled by means of potash ley, a portion of the oil is converted into soap, and the epidermis becomes detached. The caustic alkali also liberates ammonia from the mucilage around the germ.

Oily corn makes a dry kind of bread, and is not sufficiently adhesive to rise well without an admixture of rye, or other flour.

The oil of corn is easily convertible into animal fat by a slight change of composition, and consequently serves an excellent purpose for fattening poultry, cattle, and swine. Starch, also, is changed into fat as well as the carbonaceous substances of animals, and during its slow combustion in the circulation, gives out a portion of the heat of animal bodies; while, in its altered state, it goes to form a part of the living frame. Dextrine and sugar act in a similar manner, as a compound of carbon, hydrogen, and oxygen.

From the phosphates of grain, the substance of bone and the saline matters of the brain, nerves, and other solid and fluid parts of the body, are, in a great measure, derived.

The salts of iron go to the blood, and these constitute an essential portion of it, whereby it is enabled, by successive alterations of its degree of oxidation

during the circulation through the lungs, arteries, extreme vessels and veins, to convey oxygen to every part of the body.

By soaking Indian corn, after it has been cut open, in a watery solution of sulphate of copper, (blue vitriol,) the result will give a decisive proof of the presence of phosphoric acid. The "chits," or parts containing the germs, will be changed to a bluish-green, beautifully defining the limits of the phosphates of lime and of magnesia contained in the grain.

By soaking a kernel of corn split open longitudinally and thrown into a solution of sulphhydrate of ammonia, the chit is soon changed to a dark olive-colour, which arises from the change of the salts of iron into a sulphuret of that metal.

By cutting open, in a similar manner, a kernel of maize, or any other kind of grain, and dropping upon it a small quantity of the tincture of iodine, a portion of its bulk will be immediately changed to an intense blue, indicating the presence of starch, with here and there a deep port-wine-coloured speck, which will define the parts composed of dextrine. If the oil is extracted from the transparent part of the corn by alcohol, or ether, the tincture of iodine will indicate the presence of starch in that part of the grain associated with the gluten.

By these means, we may readily cause any grain to define the extent and precise limits of each of its ingredients; and by the eye, we can form a pretty correct estimate of their relative proportions in different seeds.*

The varieties of Indian corn are very numerous, exhibiting every grade of size, colour, and conformation between the shrubby reed that grows on the shores of Lake Superior, to the gigantic stalks of the Ohio valley, the tiny ears with flat, close-clinging grains of Canada, the brilliant, rounded, little pearl, or the bright-red grains and white cob of the eight-rowed

* See Jackson's Report on the Geology and Mineralogy of New Hampshire, pp. 255 et seq.

hæmatite, to the swelling ears of the big white, and yellow gourd-seed of the South. The principal varieties cultivated in the United States, which may be distinguished by the number of rows of grains on the cob, and the colour, shape, or size of the kernels, may be classified and described as follows:—

YELLOW CORN.—The colours of the varieties coming under this head, as before observed, are dependent mainly on the shades of the oil, as seen through the transparent epidermis or hull.

1. *Golden Sioux* or *Northern Yellow Flint-Corn*, derived from the Sioux Indians, in Canada, having a large cob, rather short as to length, with twelve rows of moderately-sized grains, abounding in oil, and is regarded as one of the best varieties for fattening animals, or for human food. By skilful tillage, 130 bushels have been raised to an acre, weighing 9,216 lbs. in the ear. When dry, 75 lbs. of ears gave a bushel when shelled. Several valuable hybrid varieties have been produced between the Sioux and the King Philip, the gourd-seed and the Sioux, &c.

2. *King Philip* or *Eight-rowed Yellow Corn*; so called after the celebrated chief of the Wampanoags, of that name, from which tribe the seed was originally obtained. The ears, which contain only eight rows, are longer, the cob smaller, and the grains larger than those of the golden Sioux, and it will yield about the same quantity of oil. It is a hardy plant, much esteemed in New England as a substantial article of food, where it has been cultivated from times anterior to the landing of the Pilgrims. From this variety, a number of superb kinds have been obtained, among which, are a beautiful ten and twelve-rowed hybrid from the golden Sioux, and the well known *Browne Corn*, improved by my brother, Mr. John Browne, of Long Island, in Lake Winnipissiogee. The latter variety was produced by cultivating selected ears for a succession of years, of the King Philip corn, with small but-ends, the second ripe, in the field, and taken from stalks which bore more than two ears each. The grains

of this corn are large, the cob small, and the ears usually from ten to thirteen inches in length, with only eight rows. It ripens a little later than the golden Sioux, and is very prolific, the greatest crop, per acre, that has yet been raised, being 136 bushels, weighing, in the ear, 9,520 lbs., or 70 lbs. to the bushel, and 58 lbs., when shelled.

3. *Canada Corn* or *Eight-rowed Yellow*.—This corn, which is smaller, earlier, and more solid than any of the preceding, contains more oil than any other variety, except the rice corn, and the pop corn, properly so called. It is highly valued for fattening poultry, swine, &c., and is grown by many, in gardens, for early boiling or roasting, when green. Notwithstanding it is very prolific in ears, it is seldom planted in fields, except in regions where the larger kinds will not thrive.

4. *Dutton Corn*, a variety first brought into notice, in 1818, by Mr. Salmon Dutton, of Cavendish, Vermont. The ears of corn from which it was originally selected, on an average, were from eight to twelve inches long, and contained from twelve to eighteen rows. The cob is larger, and sometimes grows to the length of fourteen or fifteen inches, but the grain is so compact upon it, that two bushels of sound ears have yielded five pecks of shelled corn, weighing 62 lbs. to the bushel. With proper management, an acre of ground will produce from 100 to 120 bushels. As it abounds in oil, gives a good yield, and ripens at least two weeks earlier than the Canada corn, it has long been a favourite for culture at the North.

5. *Southern Big Yellow Corn*.—The cob of this variety is thick and long, the grains much wider than deep, and where the rows unite with each other, their sides fall off almost to a point. This gives the outside ends of the grain a circular form, which imparts to the ear an appearance somewhat resembling a fluted column. The grain contains less oil and more starch than the northern flinty kinds, yet its outward texture is somewhat solid, flinty, and firm. It comes rather late into maturity, affords an abundant yield, and is much used

for fattening swine. Mixed with either of the white gourd-seed varieties the *Yellow Gourd-Seed* is produced, which is often mistaken for an original form.

6. *Southern Small Yellow Corn*.—The ears of this sort are more slender, as well as shorter, than the last named variety; the grains are smaller, though of the same form, of a deeper yellow, more firm and flinty, and contain an abundance of oil, which renders them more valuable for the purposes of shipping, or for feeding to poultry and swine. Although it is less productive than the big yellow, it ripens earlier, and consequently is sooner out of the reach of the autumnal frosts. Some valuable hybrids have been produced between this and the big yellow, the Virginian white gourd-seed, and other large varieties.

WHITE CORN.—The varieties which constitute this division are exceedingly variable, both as regards their composition and size, as well as in their yield and times of coming to maturity.

1. *Rhode Island White Flint-Corn*.—The grains of this variety are about the size and shape of those of the Tuscarora corn, but differ from them in containing an abundance of a transparent and colourless oil, which may easily be seen through their clear, pellucid hulls. The farinaceous parts of the grains are white, and as the quantity of oil they contain is large, the flour is more substantial as an article of food, and less liable to ferment and become sour. In Rhode Island, where it produces an abundant yield, it is a favourite grain, and stands in high repute.

2. *Southern Big White Flint-Corn*, having a large thick cob, with twelve rows of kernels, much resembling, in shape and size, those of the big yellow, and like that variety, is less productive than the white Virginian gourd-seed. It contains more starch, and less oil than the northern flint-corn; but is much softer and a better food for horses, though not so fattening to poultry and swine. When ground into meal, it is apt to become sour and consequently is unfit to be

shipped in that state, unless previously prepared by being kiln-dried. From this variety originated the genuine *White Flint-Corn*, employed for making the excellent hommony, so much in use in the Middle and Southern States.

3. *Southern Little White Flint-Corn*.—The kernels of this variety are considerably smaller than those of the preceding, and much resemble them in shape; but they are more firm and solid, contain more oil, and consequently are more valuable for feeding poultry and swine, and for human food. Although the cob is smaller in proportion to the size of the ears, the yield, per acre, is less abundant, and hence it is but little grown.

4. *Dutton White Flint-Corn*, a variety not differing materially from the yellow Dutton corn, except in the colour of its oil.

5. *Early Canadian White Flint-Corn*, cultivated principally for early boiling or roasting, while green.

6. *Tuscarora Corn*, a variety obtained from the Tuscarora Indians, in the state of New York. The ears contain from twelve to sixteen rows of grains, which are nearly as deep as they are broad, of a whitish colour on the exterior, and composed entirely within, of pure white dextrine and starch, except the germs. As it contains neither gluten nor oil, it may profitably be employed in the manufacture of starch. It is much softer, and better food for horses than the flinty kinds, and if used before it becomes sour, it may be converted into an excellent bread.

7. *White Flour-Corn*.—The ears of this variety contain twelve rows of rather thick, roundish grains, which are filled with a snowy white flour, composed principally of starch, but does not contain either gluten or oil. It is much used in some parts of the country, particularly in New Jersey, for grinding up with buck-wheat, mixed in proportions of four or five to one of corn, in order to improve the colour and other qualities of the buck-wheat flour. As it possesses similar properties as the preceding variety, it may be profitably employed for the same purposes.

8. *Virginia White Gourd-Seed Corn*.—The ears of this corn, which are not very long, neither is the cob so large as those of the big white or yellow flint, contain from twenty-four to thirty-six rows of very long, narrow grains of so soft and open a texture, that they will not bear transportation, by sea, unless they are previously kiln-dried, or completely excluded from the moist air. These grains at their exterior ends are almost flat, and grow so closely together from the cob to the surface, that they produce a greater yield than any other variety, in proportion to the size of the ears. They contain more starch and less gluten and oil than those of the flint kinds; and from their softness, they serve as better food for horses, but are less nourishing to poultry and swine. The colour of this variety is always white, unless it has been crossed with other kinds, which may invariably be known by a small indentation in the ends of the grains, when perfectly dried. The oily and glutinous parts of the Virginian gourd-seed always occur on the sides of its elongated grains, while the starch projects quite through to their summits, and by contraction in drying, produces the pits or depressions peculiar to their ends. This variety is later ripe, though more productive than any other kind. Several valuable hybrids have been produced by its cross fecundation with the yellow and white flinty sorts, among which, are the *Yellow Gourd-Seed*, and the celebrated *Burden* and *Baden* varieties, the latter of which, has produced as many as ten ears to a stalk!

9. *Early Sweet* or *Sugar Corn*, sometimes called *Pappoon Corn*.—This variety was introduced into Massachusetts, in 1779, by Captain Richard Bagnal, of Plymouth, from the country bordering on the Susquehannah, on his return from the expedition against the tribes of the Six Nations, under the command of General Sullivan. There are two kinds of this corn, one with the cob red, and the other white. The ears are short, and usually contain eight rows, the grains of which, when mature, are of a light colour, and become shrivelled and appear as if they were unripe. It con-

tains an unusually large proportion of the phosphates, and a considerable quantity of sugar and gum, though but little starch. It is extensively cultivated for culinary purposes, and serves as a delicious food, either green or dry.

HÆMATITE OF BLOOD-RED CORN, AND VARIETIES OF DIFFERENT SHADES.—The lively hues, peculiar to the red, blue, and purple corns, generally depend on the shades of the epidermis of the grains, and not the oil. The origin of these colours appears to be purely accidental, as white and yellow varieties have been planted at remote distances from any other kind, and have produced kernels of a brilliant red. The different shades of colour in corn are supposed to be caused by different proportions of iron, or other metals, combined with oxygen and some acid principle, acted upon by the rays of light.

1. *Rice Corn*, a variety with small ears, the grains of which are of various shades of colour, and often are of the size and shape of rice. It contains more oil and less starch than any other kind; and when ground, its meal cannot be made into bread alone, but is dry like sand. From its oily nature and convenient size, this corn is peculiarly adapted for feeding fowls.*

2. *Pop or Parching Corn*, sometimes called *Valparaiso Corn* (*Zea curagua*, of botanists.) The ears of this variety are small, the grains of various shades of colour, and contain, next to the rice corn, more oil and less starch, than any other kind. Its flavour is pleasant, when parched, for which purpose it is generally preferred. This variety is believed to be the *Cara* of the Incas of Peru, which, when parched, they call *Cancha*, signifying a neighbourhood or street.

* See Dr. Jackson's Report, pp. 258 et 259.



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